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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

FOREST STATISTICS

FOR

WALLA WALLA, COLUMBIA, GARFIELD,

AND ASOTIN COUNTIES, WASHINGTON

FROM THE INVESTORY PHASE OF THE FOREST SURVEY

U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE

PACIFIC NORTHWEST FOREST EXPERIMENT STATION

Thornton T. Munger, Director.

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FOREST SERVICE
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ADDRESS REPLY TO
DIRECTOR
AND REFER TO
R-NW
Forest Survey
County Statistics

424 U. S. COURT HOUSE
MAIN AND SIXTH STREETS
PORTLAND, OREGON

August 10, 1936

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Director,
California Forest Experiment Station,
331 Giannini Hall,
Berkeley, Calif.

Dear Sir:

A copy of "Forest Statistics for Walla Walla, Columbia, Garfield, and Asotin Counties, Washington", the eleventh of a series of Forest Survey mimeographed reports for eastern Washington and eastern Oregon, is enclosed for your files. The explanatory text, "The Forest Survey of Eastern Oregon and Eastern Washington", which accompanied the first report, should be referred to for detailed type descriptions and methods of survey procedure.

To date forest statistics have been released for all counties in western Oregon and western Washington, for Klamath, Wasco, Jefferson, Harney, Lake, and Deschutes Counties in eastern Oregon, and for Yakima, Klickitat, Chelan, and Kittitas Counties in eastern Washington. Additional copies of these reports are available for distribution.

Very truly yours,

THORNTON T. MUNGER, Director

By R. W. Cowlin
Acting

Enclosure

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
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FOREST STATISTICS
FOR
WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES, WASHINGTON

FROM THE INVENTORY PHASE OF THE FOREST SURVEY

Forest survey report no 63

U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
PACIFIC NORTHWEST FOREST EXPERIMENT STATION
THORNTON T. MUNGER, DIRECTOR

H. J. ANDREWS, IN CHARGE OF FOREST SURVEY R. W. COWLIN, ASSISTANT

PAUL D. KEMP, IN CHARGE OF FIELD AND OFFICE WORK
IN WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES

PORTLAND, OREGON AUGUST 3, 1936

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
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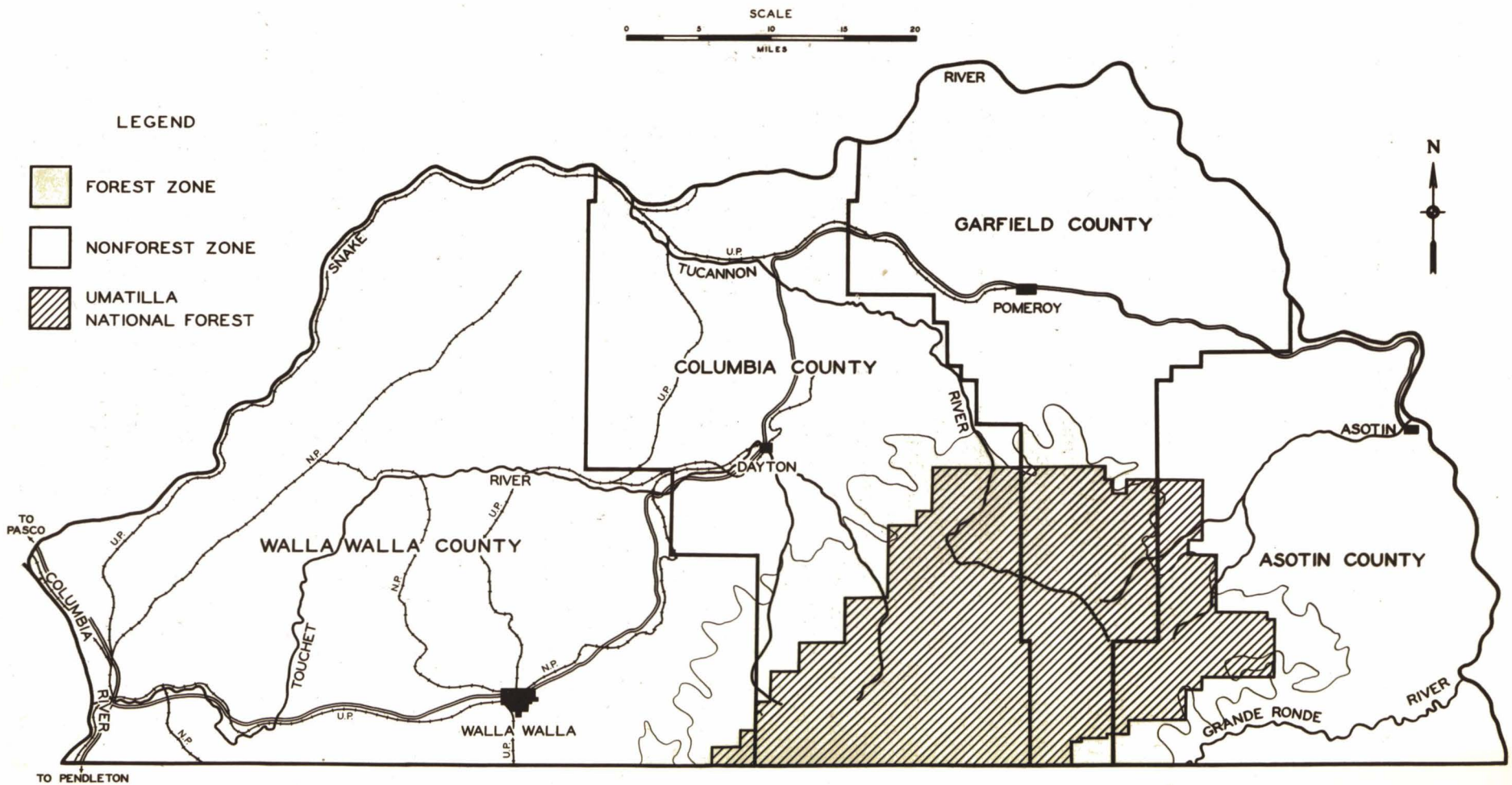
BERKELEY, CALIFORNIA

FIGURE 1

OUTLINE MAP
OF
WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES, WASHINGTON

1936



FOREST STATISTICS FOR WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES, WASHINGTON

By Paul D. Kemp[1/]

This report embodies some of the results of a forest inventory made in 1935 by the Forest Service as part of a national survey of forest resources. The basic data are consolidated in five tables. Detailed definitions of types and the procedure used in the survey are described in "The Forest Survey of Eastern Oregon and Eastern Washington",[2/] an explanatory text which should be read in connection with this report.

Location and Description of Counties

Walla Walla, Columbia, Garfield, and Asotin Counties occupy that portion of southeastern Washington south of the Snake River and east of the Columbia River and have a total area of 2,190,720 acres (fig. 1). They form a part of the vast bunch grass prairie characteristic of the Columbia Basin. The forest land is practically limited to the northern terminus of the Blue Mountains that feature the south-central portion.

The surface relief in general is a high undulating and rolling plateau covered chiefly by windlaid deposits. In the southwestern portion the plateau grades sharply into a gently sloping plain. Surmounting the plateau in the south-central portion are the Blue Mountains, which consist chiefly of irregular narrow ridges, deep canyons, and occasional peaks. Elevations range from 319 feet on the Columbia River to about 6,600 feet on the summit of Diamond Peak. The prevailing drainage is northwesterly into the Snake River; the southwest portion drains directly into the Columbia River and a small area in the southeast portion drains into the Grande Ronde River.

1/ THE FIELD AND OFFICE WORK FOR THESE COUNTIES WAS DONE BY PAUL D. KEMP, GEORGE H. JACKSON, AND R. W. TAYLOR.

2/ OREGON AND WASHINGTON WERE DIVIDED FOR PURPOSES OF THE SURVEY INTO TWO REGIONS, (1) THE DOUGLAS FIR REGION, CONSISTING OF THAT PART OF BOTH STATES WEST OF THE SUMMIT OF THE CASCADE RANGE, AND (2) EASTERN OREGON AND EASTERN WASHINGTON, THAT PART OF BOTH STATES EAST OF THE SUMMIT OF THE CASCADE RANGE. EACH REGION WAS DIVIDED INTO FOREST SURVEY UNITS COMPOSED OF ONE OR MORE COUNTIES. AT A LATER DATE A REPORT WILL BE ISSUED FOR EACH SURVEY UNIT PRESENTING A TEXTUAL DESCRIPTION OF THE UNIT, DETAILED INVENTORY SUMMARIES, AND STATISTICS OF GROWTH AND DEPLETION ANALYZED IN THE LIGHT OF THE INVENTORY. FINALLY, A REGIONAL REPORT WILL BE ISSUED WHICH WILL SUMMARIZE THE UNIT REPORTS, PRESENTING AND DISCUSSING FINDINGS FOR THE REGION AS A WHOLE. THE REGIONAL REPORT WILL INCLUDE AN INTERPRETATION OF THE FOREST SURVEY DATA AS RELATED TO OTHER ECONOMIC DATA AND A COMPREHENSIVE ANALYSIS OF THE REGIONAL FOREST SITUATION FROM BOTH A PHYSICAL AND AN ECONOMIC STANDPOINT.

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Local climatic conditions, influenced chiefly by elevation and topography, vary considerably. Annual precipitation which is heaviest during the winter and spring seasons ranges from 10 inches at the lower elevations to more than 40 inches on the summit of the Blue Mountains. Precipitation at Dayton (elevation about 1,700 feet) in 1935 totalled 13.34 inches; normal annual precipitation based on records since 1899 is about 21 inches. The highest and lowest temperatures of record are 112° F. and -22° F. The wind movement at times is violent causing characteristic dust storms; most of the soils have developed from loessal or windblown materials.

The O. W. R. & N. branch of the Union Pacific Railroad and branch lines of the Northern Pacific Railroad link the principal settlements in the western two-thirds of the area with transcontinental railroad systems. A primary highway provides yearlong road connections to Portland and Spokane and the area is served by numerous secondary roads. Where they border the unit the Columbia and Snake Rivers are navigable by shallow draft boats.

According to the Bureau of the Census, in 1930 the total population of these counties was 45,564, or approximately 13 persons per square mile. Walla Walla, the largest city, had a population of 15,976; ten other cities had populations ranging from 500 to 3,000. The population, on the whole, had increased about 3 percent since 1920 in spite of minor decreases in Columbia and Garfield Counties.

Nonforest Zone and Agricultural Development

The nonforest land, embracing 1,826,635 acres or approximately 83 percent of the total acreage, occupies all but the high mountain area in the south-central portion of the unit as shown in figure 1. Except for a small area in the western portion where sagebrush and rabbit brush predominated, the original vegetation was chiefly bunch grass.

The first white settlement in eastern Washington was established at the mouth of Walla Walla River in 1825. For many years the nonforest lands were used chiefly for grazing. Early development was founded on the stock industry. In the latter part of the 19th century the advent of railroads and the knowledge that the area was suitable for the production of small grains greatly stimulated settlement and agricultural development.

In 1929, according to the Bureau of the Census, the land in farms totalled 1,706,269 acres, of which approximately 56 percent was crop land. Approximately half of the original nonforest area is cropped; the remainder consists chiefly of grass land that has never been plowed and abandoned farm land.

In 1929, the value of farm products from approximately 500,000 acres of crop land totalled $16,400,000. The value of forest products from farm woodlands was about $16,000. The grain crop constituted approximately 75 percent of the value of farm products; fruit production ranked second in importance and cattle and sheep production ranked third.

Wheat grown by dry farming methods is the principal crop. Usually the land is alternately cropped and fallowed. During the fallow year it is ordinarily clean cultivated to conserve moisture; small areas occasionally are leased to packing companies for growing peas. The soil is generally disked or shared, leaving the trash as close to the surface as possible to prevent erosion. Most of the harvesting is done with combines.

The irrigated lands, devoted chiefly to the production of alfalfa, fruit and vegetables in 1929 totalled 25,650 acres. They occur chiefly along Tucannon River, Walla Walla River, Patte Creek, and Asotin Creek. Water is obtained by gravity diversion from streams and storage dams, and from wells.

Forest Zone

Except for narrow stringers along streams the lower timberline occurs at about 2,500 feet elevation and the forest zone is consequently limited to the mountainous area in the south-central portion included in the Umatilla National Forest. The forest area is featured by numerous glades.

Forest lands constitute about 17 percent of the gross area, ranging from about 3 percent in Walla Walla County to 34 percent in Columbia County. Approximately 45 percent of the coniferous forest land is occupied by stands of sawlog size (table 3), 32 percent is occupied by stands of less than sawlog size, and 23 percent consists of noncommercial areas and deforested burns. Ponderosa pine predominates on 47 percent of the area occupied by stands of sawlog size, 38 percent is characterized by stands of upper-slope species--chiefly Douglas fir, western larch and white fir; lowland white fir predominates on the remaining area.

Forest Types[3/]

Ponderosa pine forests of saw-timber size (types 20.5, 20, 21, and 5½, table 2 and figure 4) constitute the most extensive stands in the unit. They occur chiefly below 5,000 feet elevation on benches and south slopes. Ponderosa pine averages about 75 percent of the stand volume which ranges from 2,000 to 25,000 board feet per acre. Ponderosa pine also forms about 30 percent of the stand volume of mixed pine forests (type 27) which prevail in canyons and on north slopes.

Upper-slope forests (type 27.5, tables 2 and 2A) consisting chiefly of mixed stands of Douglas fir, western larch, Engelmann spruce, lowland white fir, and lodgepole pine characterize the higher elevations.

3/ THE DISTRIBUTION OF THE 21 FOREST TYPES IS SHOWN IN DETAIL ON 1-INCH-TO-THE-MILE COUNTY MAPS, AND IN GENERALIZED FORM ON A LITHOGRAPH OF THE SOUTHEAST QUARTER OF WASHINGTON. COPIES OF THESE MAPS MAY BE PROCURED FROM THE PACIFIC NORTHWEST FOREST EXPERIMENT STATION.

Volumes range from 5,000 to 40,000 board feet per acre, the heaviest stands being almost pure spruce.

The forests in which lowland white fir predominates (type 29) are the least extensive of the saw-timber types and the least valuable commercially. They consist chiefly of low-quality stands on relatively inaccessible areas and of residual stands resulting from selective logging in ponderosa pine stands.

Approximately three-fourths of the forests of less than sawlog size have followed devastating fires; the remainder are the result of logging. Almost half of the area occupied by immature forests is 70 to 100 percent stocked and only 7 percent of the area is poorly stocked. The age of these forests ranging from 10 to 70 years averages about 40 years. Upper-slope forests (type 28⅓, tables 2 and 2A) predominate on almost half of the area occupied by second-growth stands; 41 percent is composed of ponderosa pine stands (type 22) and pine mixture (type 28). The remaining stands below sawlog size are chiefly lodgepole pine (types 26 and 26A) and fir-mountain hemlock (type 24).

Approximately 4 percent of the forest area is occupied by subalpine forests (type 33) and 19 percent is noncommercial rocky areas (type 38). The principal areas of type 38 occur on the watersheds of Butte and Crooked Creeks on which, prior to the establishment of the national forest, the forest cover was almost entirely burned to increase sheep range. Although these watersheds now support remnant old trees and sporadic stands of thrifty second growth they were classified as noncommercial-forest land because of extensive rock outcroppings and rugged topography.

The classification of commercial-forest land on the basis of productive capacity is shown in table 4. Ponderosa pine lands average a site quality IV with a site index (average height in feet of dominant trees at 100 years) of 77.

Volume of Merchantable Timber

Approximately 38 percent of the timber volume (table 1) is ponderosa pine, 19 percent is white fir, 17 percent is Douglas fir, and 16 percent is western larch. Engelmann spruce, alpine fir, and lodgepole pine compose practically all of the remaining volume. The volume of the four principal species is shown graphically in figure 2.

By far the greater portion of the ponderosa pine volume occurs in practically pure pine stands below 4,000 feet elevation. The white fir, Engelmann spruce, and western larch volume occurs chiefly in mixed stands throughout the range of commercial timber. Lodgepole pine is limited to the higher elevations. Western white pine occurs chiefly in deep canyons on Butte Creek.

Ownership of Forest Resources

Approximately 72 percent of the forest area, including 73 percent of the merchantable-timber volume, is national forest land; 26 percent of the area including 25 percent of the timber volume is private land; the remaining area is chiefly State land. National forest lands contain 71 percent of the timber stands of sawlog size, 54 percent of the stands of less than sawlog size and 98 percent of the noncommercial areas and deforested burns as compared with 26 percent, 42 percent, and 2 percent, respectively, for private lands.

Depletion and Logging Conditions

About 10 percent of the present commercial-forest area has been heavily logged. In addition there has been considerable selective cutting of private and national-forest timber. All of the logged lands are restocked. The active sawmills in the four counties since 1925 varied from 1 to 4. The largest, located at Dayton, has an 8-hour capacity of 40,000 board feet. A box factory operated in conjunction with this mill has a daily capacity of 30,000 board feet. Annual lumber production during the 1925-34 period averaged about $3\frac{1}{2}$ million board feet. Approximately 70 percent of the cut was ponderosa pine. The output of the mills is used chiefly for local construction and in the manufacture of box shooks.

Logging conditions are not very favorable. Most of the roads through the forest area follow ridges whereas the best stands of ponderosa pine occur on slopes and in canyons. The most favorable logging ground occurs on plateaus where lodgepole pine, Douglas fir, and Engelmann spruce predominate.

The present rate of cutting is considerably less than the productive capacity of the forest lands. Moreover most of the timber volume occurs on national forest land, which is being managed on a sustained-production basis. One of the problems in local forest management is the utilization of white fir which is supplanting western larch and ponderosa pine on the more accessible private lands. Because of the defectiveness of white fir and its unsuitability for fuel or for use in exposed situations it is generally ignored in logging. Small quantities are used in the manufacture of boxes and crates. Lodgepole pine, which is ordinarily considered an inferior species, is widely used for props in the orchard industry and for fuel. Farmers transport it long distances from the higher portions of the national forest. To supply the increasing demand the lodgepole pine stands are being cut to favor reforestation by this species.

Social Aspects

Only 2.5 percent of the gainfully employed population in 1929 was engaged in forest pursuits and approximately the same percentage of the total population was dependent upon forest industries. The importance

of the forest lands in local economy however is not measured by lumber production and employment since farms and communities within a wide radius are dependent upon them for fuel, posts and poles. The volume of these minor forest products annually removed from the forests is greater than the annual production of sawlogs.

The extensive area of noncommercial forest land and the numerous open glades that feature the commercial forest area serve as an important summer range for cattle and sheep when water is scarce on open range land. Forested lands are the principal sources of municipal water supplies and of most of the perennial streams. The abundant wild life, particularly elk and deer, found in the forests, the fish that abound in the streams and the relief that the forests afford against the oppressive heat and monotony of the vast nonforest area, constitute valuable recreational assets.

FOREST STATISTICS FOR WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES, WASHINGTON

TABLE 1. VOLUME OF TIMBER BY SPECIES AND OWNERSHIP CLASS
DATA CORRECTED TO AUGUST 1, 1935

TREES 12" AND MORE IN D.B.H.
THOUSANDS OF BOARD FEET, LOG SCALE, SCRIBNER RULE

COUNTY AND SPECIES 1/	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	FEDERAL NATIONAL FOREST PUBLIC DOMAIN	FEDERAL NATIONAL FOREST AVAILABLE FOR CUTTING	FEDERAL NATIONAL FOREST RESERVED FROM CUTTING	TOTAL
WALLA WALLA							
PONDEROSA PINE	6,450	65	416	230		370	7,531
DOUGLAS FIR	4,053	15	587	135		230	5,020
WHITE FIR	7,972	30	890	200		150	9,242
WESTERN LARCH	1,035	7	98	18		25	1,183
ENGELMANN SPRUCE	1,674		390	45		25	2,134
COTTONWOOD	538			45			583
TOTAL	21,722	117	2,381	673		800	25,693
COLUMBIA							
PONDEROSA PINE	28,128	1,106		564	84,897		114,695
WESTERN WHITE PINE					247		247
LODGEPOLE PINE	549	39			4,612		5,200
DOUGLAS FIR	21,691	1,214		462	55,009		78,376
WHITE FIR	22,854	1,150		237	85,643		109,884
ALPINE FIR	5	45			18,005		18,055
WESTERN LARCH	7,195	255		156	66,579		74,185
ENGELMANN SPRUCE	4,227			3	18,379		22,609
TOTAL	84,649	3,809		1,422	333,371		423,251
GARFIELD							
PONDEROSA PINE	25,996	945	398	227	112,607		140,173
LODGEPOLE PINE					7,636		7,636
DOUGLAS FIR	2,919	315	64	71	57,181		60,550
WHITE FIR	621	157		16	40,071		40,865
ALPINE FIR					12,509		12,509
WESTERN LARCH	855	157	126	28	62,330		63,496
ENGELMANN SPRUCE					30,936		30,936
TOTAL	30,391	1,574	588	342	323,270		356,165
ASOTIN							
PONDEROSA PINE	93,545	5,838	1,050	800	37,425		138,658
LODGEPOLE PINE					775		775
DOUGLAS FIR	14,787	1,626		123	23,130		39,666
WHITE FIR	12,854	2,309	75	105	20,514		35,857
ALPINE FIR					1,047		1,047
WESTERN LARCH	5,528	763			22,106		28,397
ENGELMANN SPRUCE	200	20			10,252		10,472
TOTAL	126,914	10,556	1,125	1,028	115,249		254,872
TOTAL ALL COUNTIES							
PONDEROSA PINE	154,119	7,954	1,864	1,821	234,929	370	401,057
WESTERN WHITE PINE					247		247
LODGEPOLE PINE	549	39			13,023		13,611
DOUGLAS FIR	43,450	3,170	651	791	135,320	230	183,612
WHITE FIR	44,301	3,646	965	558	146,228	150	195,848
ALPINE FIR	5	45			31,561		31,611
WESTERN LARCH	14,613	1,182	224	202	151,015	25	167,261
ENGELMANN SPRUCE	6,101	20	390	48	59,567	25	66,151
COTTONWOOD	538			45			583
GRAND TOTALS	263,676	16,056	4,094	3,465	771,890	800	1,059,981

1/ SPECIES NOT LISTED HERE THAT OCCUR IN THIS GROUP OF COUNTIES, BUT IN NEGLIGIBLE QUANTITIES ONLY, ARE ALDER, ASPEN, BIRCH, JUNIPER, CHERRY, HACKBERRY, MOUNTAIN MAHOGANY, DWARF MAPLE, WHITEBARK PINE, AND MOUNTAIN HEMLOCK.

FOREST STATISTICS FOR WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES, WASHINGTON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 2. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO AUGUST 1, 1935

SURVEY TYPE NO.	TYPE DEFINITION	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	FEDERAL				TOTAL
					PUBLIC DOMAIN	RAILROAD SELECTION PENDING	NATIONAL FOREST AVAILABLE FOR CUTTING	NATIONAL FOREST RESERVED FROM CUTTING	
	WOODLAND:								
5½	PONDEROSA PINE WOODLAND: SCATTERED STANDS OF MATURE PONDEROSA PINE ON UNFAVORABLE SITES	4,625	50		90		4,410	50	9,225
	PONDEROSA PINE: FORESTS CONTAINING 50% OR MORE OF PONDEROSA PINE								
20	PONDEROSA PINE, LARGE: FORESTS CONTAINING 50 TO 80% OF PONDEROSA PINE, MORE THAN 22" DBH	4,145	450	65	25		23,165		27,850
20.5	PURE PONDEROSA PINE, LARGE: FORESTS CONTAINING 80% OR MORE OF PONDEROSA PINE, MORE THAN 22" DBH	16,250	735	200	220		19,230	65	36,700
21	PONDEROSA PINE, SMALL: 12 TO 22" DBH	3,905	270		95		565		4,835
22	PONDEROSA PINE SEEDLINGS, SAPLINGS AND POLES: LESS THAN 12" DBH	18,050	530	125	120		1,070		19,895
	PINE MIXTURE: MIXED FORESTS CONTAINING 20 TO 50% OF PONDEROSA PINE								
27	PINE MIXTURE, LARGE: 12" OR MORE DBH	5,770	765	10	245		8,940		15,730
28	PINE MIXTURE, SMALL: LESS THAN 12" DBH	20,420	765	205	365	65	7,440		29,260
	DOUGLAS FIR: FORESTS CONTAINING 60% OR MORE OF DOUGLAS FIR								
9B	DOUGLAS FIR, SMALL POLES: 6 TO 10" DBH	180			75		700	80	1,035
10	DOUGLAS FIR, SEEDLINGS AND SAPLINGS: LESS THAN 6" DBH	125							125
	FIR-MOUNTAIN HEMLOCK: FORESTS CONTAINING 50% OR MORE OF ALPINE FIR AND MOUNTAIN HEMLOCK								
24	FIR-MOUNTAIN HEMLOCK, SMALL: LESS THAN 12" DBH	140	10				1,025		1,175
	UPPER-SLOPE MIXTURE: MIXED FORESTS OF WESTERN LARCH, DOUGLAS FIR, WHITE FIR, ALPINE FIR, LODGEPOLE PINE, WHITE PINE, OR ENGELMANN SPRUCE; OCCASIONALLY OTHER SPECIES								
27½	UPPER-SLOPE MIXTURE, LARGE: 12" OR MORE DBH	6,630	775	195	10		55,125	50	62,785
28½	UPPER-SLOPE MIXTURE, SMALL: LESS THAN 12" DBH	10,355	1,625	150	265	165	44,460	2,145	59,165
	WHITE FIR: FORESTS CONTAINING 50% OR MORE OF WHITE FIR								
29	WHITE FIR, LARGE: 12" OR MORE DBH	2,520	5	25	50		7,485		10,085
30	WHITE FIR, SMALL: LESS THAN 12" DBH	725		55	30		55		865
	LODGEPOLE PINE: FORESTS CONTAINING 50% OR MORE OF LODGEPOLE PINE								
26	LODGEPOLE PINE, MEDIUM: 6 TO 10" DBH						6,115	25	6,140
26A	LODGEPOLE PINE, SMALL: LESS THAN 6" DBH						1,905		1,905
	HARDWOOD: FORESTS CONTAINING 50% OR MORE OF NORTHERN BLACK COTTONWOOD								
31.5	HARDWOOD, LARGE: 12" OR MORE DBH	415			30				445
31	HARDWOOD, SMALL: LESS THAN 12" DBH	150	75				30		255
33	SUBALPINE: FORESTS AT UPPER LIMITS OF TREE GROWTH, USUALLY UNMERCHANTABLE		120				10,190	3,240	13,550
	DEFORESTED AREAS: NONRESTOCKED AREAS DEFORESTED OTHERWISE THAN BY CUTTING								
37	DEFORESTED BURNS	895			20		725		1,640
38	NONCOMMERCIAL ROCKY AREAS	305	115				69,235	1,765	71,420
	TOTALS FOR FOREST LAND	95,605	6,290	1,030	1,640	230	261,870	7,420	374,085
1 & 2	NONFOREST LAND: CULTIVATED, GRASS, SAGEBRUSH, BARRENS, CITIES, UNMEANDERED WATER SURFACES, ETC.	1,771,180 ACRES OF NONFOREST LAND UNCLASSIFIED BY OWNERSHIP:					41,040	4,415	1,816,635
	TOTALS FOR ALL COUNTIES						302,910	11,835	1/ 2,190,720

1/ THE TOTAL AREA OF THE FOUR COUNTIES, ACCORDING TO THE BUREAU OF THE CENSUS, IS 2,190,720 ACRES. OF THIS TOTAL, 419,540 ACRES WAS CLASSIFIED AS TO OWNERSHIP BY THE FOREST SURVEY.

FOREST STATISTICS FOR WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES, WASHINGTON

TABLE 2A. AREA IN ACRES, OF ALL FOREST COVER TYPES, BY COUNTY AND GENERALIZED OWNERSHIP CLASS
DATA CORRECTED TO AUGUST 1, 1935

SURVEY TYPE NO.	TYPE DEFINITION	WALLA WALLA				COLUMBIA				GARFIELD				ASOTIN				ALL COUNTIES
		PRIVATE	NATIONAL FOREST	OTHER PUBLIC	TOTAL	PRIVATE	NATIONAL FOREST	OTHER PUBLIC	TOTAL	PRIVATE	NATIONAL FOREST	OTHER PUBLIC	TOTAL	PRIVATE	NATIONAL FOREST	OTHER PUBLIC	TOTAL	
	WOODLAND:																	
5½	PONDEROSA PINE WOODLAND: SCATTERED STANDS OF MATURE PONDEROSA PINE ON UNFAVORABLE SITES		50		50	2,560	3,275	125	5,960	150	935		1,085	1,915	200	15	2,130	9,225
	PONDEROSA PINE: FORESTS CONTAINING 50% OR MORE OF PONDEROSA PINE																	
20	PONDEROSA PINE, LARGE: FORESTS CONTAINING 50 TO 80% OF PONDEROSA PINE, MORE THAN 22" DBH	190		80	270	1,790	11,055	105	12,950	150	10,375	315	10,840	2,015	1,735	40	3,790	27,850
20.5	PURE PONDEROSA PINE, LARGE: FORESTS CONTAINING 80% OR MORE OF PONDEROSA PINE, MORE THAN 22" DBH	295	65	35	395	2,320	5,610	40	7,970	3,485	9,445	135	13,065	10,150	4,175	945	15,270	36,700
21	PONDEROSA PINE, SMALL: 12 TO 22" DBH	240		40	280	3,160	160	240	3,560	505	405	85	995					4,835
22	PONDEROSA PINE SEEDLINGS, SAPLINGS AND POLES: LESS THAN 12" DBH	3,455		240	3,695	5,345	85	425	5,855	5,255	985	30	6,270	3,995		80	4,075	19,895
	PINE MIXTURE: MIXED FORESTS CONTAINING 20 TO 50% OF PONDEROSA PINE																	
27	PINE MIXTURE, LARGE: 12" OR MORE DBH	960		60	1,020	1,845	2,050	345	4,240	670	4,035		4,705	2,295	2,855	615	5,765	15,730
28	PINE MIXTURE, SMALL: LESS THAN 12" DBH	7,390		685	8,075	9,070	2,675	630	12,375	325	3,350		3,675	3,635	1,415	85	5,135	29,260
	DOUGLAS FIR: FORESTS CONTAINING 60% OR MORE OF DOUGLAS FIR																	
98	DOUGLAS FIR, SMALL POLES: 6 TO 10" DBH	60	80		140									120	700	75	895	1,035
10	DOUGLAS FIR, SEEDLINGS AND SAPLINGS: LESS THAN 6" DBH	125			125													125
	FIR-MOUNTAIN HEMLOCK: FORESTS CONTAINING 50% OR MORE OF ALPINE FIR AND MOUNTAIN HEMLOCK																	
24	FIR-MOUNTAIN HEMLOCK, SMALL: LESS THAN 12" DBH					140	1,025	10	1,175									1,175
	UPPER-SLOPE MIXTURE: MIXED FORESTS OF WESTERN LARCH, DOUGLAS FIR, WHITE FIR, ALPINE FIR, LODGEPOLE PINE, WHITE PINE, OR ENGELMANN SPRUCE: OCCASIONALLY OTHER SPECIES																	
27½	UPPER-SLOPE MIXTURE, LARGE: 12" OR MORE DBH	995	50	210	1,255	4,290	27,025	335	31,650		18,090		18,090	1,345	10,010	435	11,790	62,785
28½	UPPER-SLOPE MIXTURE, SMALL: LESS THAN 12" DBH	2,315	720	1,120	4,155	7,350	25,000	975	33,325		16,735		16,735	690	4,150	110	4,950	59,165
	WHITE FIR: FORESTS CONTAINING 50% OR MORE OF WHITE FIR																	
29	WHITE FIR, LARGE: 12" OR MORE DBH	350		30	380	2,095	6,610	25	8,730		790		790	75	85	25	185	10,085
30	WHITE FIR, SMALL: LESS THAN 12" DBH	560		85	645	165	55		220									865
	LODGEPOLE PINE: FORESTS CONTAINING 50% OR MORE OF LODGEPOLE PINE																	
26	LODGEPOLE PINE, MEDIUM: 6 TO 10" DBH						4,490		4,490		1,525		1,525		125		125	6,140
26A	LODGEPOLE PINE, SMALL: LESS THAN 6" DBH						645		645		445		445		815		815	1,905
	HARDWOOD: FORESTS CONTAINING 30% OR MORE OF NORTHERN BLACK COTTONWOOD																	
31.5	HARDWOOD, LARGE: 12" OR MORE DBH	415		30	445													445
31	HARDWOOD, SMALL: LESS THAN 12" DBH	145			145	5	30	75	110									255
33	SUBALPINE: FORESTS AT UPPER LIMITS OF TREE GROWTH, USUALLY UNMERCHANTABLE						13,245	120	13,365		125		125		60		60	13,550
	DEFORESTED AREAS: NONRESTOCKED AREAS DEFORESTED OTHERWISE THAN BY CUTTING																	
37	DEFORESTED BURNS					895	410	20	1,325		315		315					1,640
38	NONCOMMERCIAL ROCKY AREAS	110	320		430	160	39,730	115	40,005		19,970		19,970	35	10,980		11,015	71,420
	TOTAL FOREST TYPES	17,605	1,285	2,615	21,505	41,190	143,175	3,585	187,950	10,540	87,525	565	98,630	26,270	37,305	2,425	66,000	374,085
1 & 2	NONFOREST LAND: CULTIVATED, GRASS, SAGEBRUSH, BARRENS, CITIES, UNMEANDERED WATER SURFACES, ETC. — CLASSIFIED BY OWNERSHIP		960		960		16,420		16,420		8,650		8,650		19,425		19,425	45,455
	UNCLASSIFIED BY OWNERSHIP				707,135				344,750				336,880				302,415	1,771,180
	GRAND TOTAL				809,600				549,120				444,160				387,840	2,190,720

FOREST STATISTICS FOR WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES, WASHINGTON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 3. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO AUGUST 1, 1935

TYPE DEFINITION		PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	FEDERAL: PUBLIC DOMAIN	FEDERAL: RAILROAD SELECTION PENDING	FEDERAL: NATIONAL FOREST AVAILABLE FOR CUTTING	FEDERAL: NATIONAL FOREST RESERVED FROM CUTTING	TOTAL
HARDWOOD: COTTONWOOD									
SURVEY TYPES 31 AND 31.5		565	75		30		30		700
PONDEROSA PINE 12" OR MORE DBH									
SURVEY TYPES 5½, 20.5, 20, 21, AND 27		34,695	2,270	275	675		56,310	115	94,340
PONDEROSA PINE LESS THAN 12" DBH	ON CUTOVER AREAS	19,860	495	125	190		650		21,320
SURVEY TYPES 22 AND 28	ON OLD BURNS	18,610	800	205	295	65	7,860		27,835
	TOTAL	38,470	1,295	330	485	65	8,510		49,155
CONIFERS 12" OR MORE DBH OTHER THAN PONDEROSA PINE AND LODGEPOLE PINE									
SURVEY TYPES 27½ AND 29		9,150	780	220	60		62,610	50	72,870
CONIFERS LESS THAN 12" DBH OTHER THAN PONDEROSA	ON CUTOVER AREAS	4,925	475	70	85		1,240		6,795
PINE AND LODGEPOLE PINE	ON OLD BURNS	6,600	1,160	135	285	165	45,000	2,225	55,570
SURVEY TYPES 9B, 10, 24, 28½, AND 30	TOTAL	11,525	1,635	205	370	165	46,240	2,225	62,365
LODGEPOLE PINE LESS THAN 12" DBH									
SURVEY TYPES 26 AND 26A							8,020	25	8,045
NONCOMMERCIAL AREAS									
SURVEY TYPES 33 AND 38		305	235				79,425	5,005	84,970
DEFORESTED BURNS									
SURVEY TYPE 37		895			20		725		1,640
TOTALS FOR FOREST LAND		95,605	6,290	1,030	1,640	230	261,870	7,420	374,085
NONFOREST LAND									
SURVEY TYPES 1 AND 2		1,771,180 ACRES OF NONFOREST LAND UNCLASSIFIED BY OWNERSHIP					41,040	4,415	1,816,635
TOTALS FOR ALL COUNTIES							302,910	11,835	1/ 2,190,720

1/ THE TOTAL AREA OF THE FOUR COUNTIES, ACCORDING TO THE BUREAU OF THE CENSUS, IS 2,190,720 ACRES. OF THIS TOTAL, 419,540 ACRES WAS CLASSIFIED AS TO OWNERSHIP BY THE FOREST SURVEY.

FOREST STATISTICS FOR WALLA WALLA, COLUMBIA, GARFIELD,
AND ASOTIN COUNTIES, WASHINGTON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 4. AREA OF FOREST LAND, BY SITE QUALITY
DATA CORRECTED TO AUGUST 1, 1935

TYPE	SITE QUALITY CLASS 1/		AREA			
				PERCENTAGE OF--		
			ACRES	CONIFEROUS FOREST LAND CLASSIFIED AS TO SITE QUALITY	TOTAL FOREST LAND 2/	TOTAL AREA OF COUNTIES
PONDEROSA PINE, PONDEROSA PINE MIXTURE, AND WHITE FIR	PONDEROSA PINE	III	2,381	0.8	0.6	0.1
		IV	89,655	32.0	24.0	4.1
		V	59,125	21.1	15.8	2.7
		VI	4,199	1.5	1.1	0.2
			155,360	55.4	41.5	7.1
DOUGLAS FIR, FIR-MOUNTAIN HEMLOCK, AND UPPER-SLOPE MIXTURE	DOUGLAS FIR					
		IV	32,868	11.7	8.8	1.5
		V	92,142	32.9	24.6	4.2
			125,010	44.6	33.4	5.7
TOTAL			280,370	100.0	74.9	12.8
LODGEPOLE PINE			8,045		2.2	0.4
NONCOMMERCIAL ROCKY AREAS			71,420		19.1	3.3
SUBALPINE			13,550		3.6	0.6
HARDWOOD			700		0.2	
TOTAL			93,715		25.1	4.3
GRAND TOTAL			374,085		100.0	17.1

1/ THE "SITE QUALITY" OF A FOREST AREA IS ITS RELATIVE PRODUCTIVE CAPACITY, DETERMINED BY CLIMATIC, SOIL, TOPOGRAPHIC, AND OTHER FACTORS. THE INDEX OF SITE QUALITY IS THE AVERAGE HEIGHT OF THE DOMINANT STAND AT THE AGE OF 100 YEARS. SIX SITE QUALITY CLASSES ARE RECOGNIZED FOR PONDEROSA PINE AND FIVE FOR DOUGLAS FIR, CLASS I BEING IN EACH CASE THE HIGHEST. IN THE SURVEY THE PONDEROSA PINE AND DOUGLAS FIR CLASSIFICATIONS, RESPECTIVELY, WERE USED NOT ONLY FOR TYPES OF WHICH THESE SPECIES ARE CHARACTERISTIC COMPONENTS BUT FOR OTHER TYPES FOR WHICH NO SITE QUALITY CLASSIFICATIONS HAVE BEEN DEVELOPED.

2/ THE TOTAL AREA OF THE FOUR COUNTIES, ACCORDING TO THE BUREAU OF THE CENSUS, IS 2,190,720 ACRES. OF THIS TOTAL, ACCORDING TO FOREST SURVEY DATA, 374,085 ACRES (17.1 PERCENT) IS FOREST LAND AND 1,816,635 ACRES (82.9 PERCENT) IS NONFOREST LAND.

FOREST STATISTICS FOR WALLA WALLA, COLUMBIA, GARFIELD, AND ASOTIN COUNTIES, WASHINGTON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 2. DISTRIBUTION OF SAW-TIMBER VOLUME BY SPECIES, AND OWNERSHIP CLASSES (FROM TABLE 1)

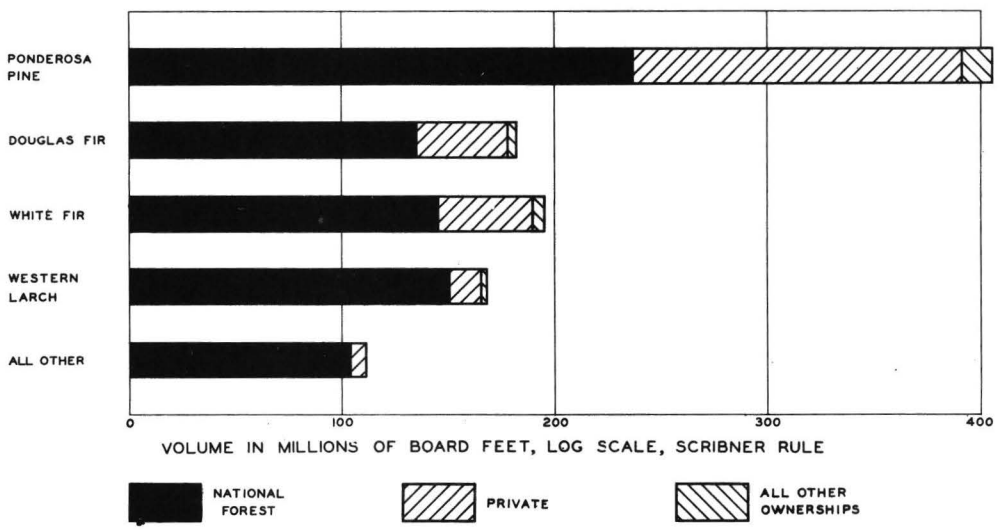

FIGURE 3. OWNERSHIP OF FOREST LAND (FROM TABLE 2)

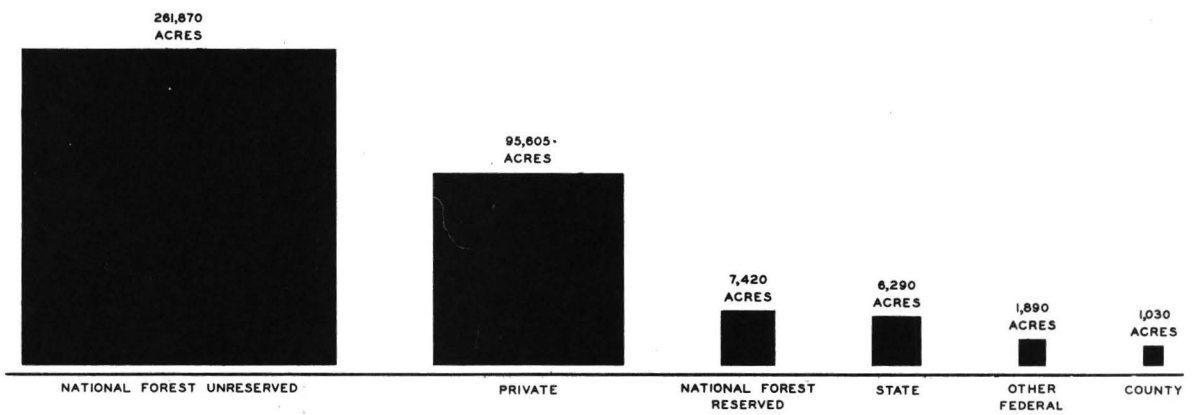

FIGURE 4. DISTRIBUTION OF FOREST LAND BY GENERALIZED TYPES, ALL OWNERSHIP CLASSES (FROM TABLE 3)